THE HENRY J. KAISER FAMILY FOUNDATION

MEDICARE

Medicare Spending and Use of Medical Services for Beneficiaries in Nursing Homes and Other Long-Term Care Facilities:

A Potential for Achieving Medicare Savings and Improving the Quality of Care

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Executive Summary

OVERVIEW

In recent years, policymakers and researchers have looked for ways to improve the delivery of care for the Medicare population, with particular emphasis on identifying and targeting the subset of beneficiaries who account for a disproportionate share of Medicare spending. The 2010 health care reform law includes a number of demonstrations, pilots, and programs designed to test interventions for relatively high-cost beneficiaries, including interventions aiming to reduce hospital readmissions, control spending for post-acute care through bundled payments, establish incentives for better care coordination through accountable care organizations, and create a new Center for Medicare and Medicaid Innovation.[1]

Yet, relatively little attention has been focused on the medical care and associated Medicare costs for the growing number of Medicare beneficiaries living in long-term care facilities – a group who may be particularly well-suited for interventions designed to reduce unnecessary emergency room visits and hospitalizations, improve care management for high-cost populations, and ultimately limit the growth in Medicare spending.

This research examines Medicare spending and use of Medicare-covered services among beneficiaries living in nursing homes, assisted living facilities and other long-term care facilities, using data from the Medicare Current Beneficiary Survey (MCBS) Cost and Use File from 2003 through 2006.[2]

We find that beneficiaries living in long-term care facilities account for a disproportionate share of Medicare spending, with relatively high rates of hospitalizations, emergency room visits, skilled nursing facility admissions and other Medicare-covered services. The relatively high Medicare spending is incurred not only by long-term care residents who die within the year, or those who transition from another setting into a long-term care facility, but also by beneficiaries living in a facility throughout the calendar year. Studies indicate that 30 to 67 percent of hospitalizations among facility residents could be prevented with well-targeted interventions.[3] Others have identified factors that contribute to preventable hospitalizations, including liability concerns, limited staff capacity, financial incentives, and physician preferences.[4] This analysis illustrates how successful efforts to reduce the rate of preventable hospitalizations could yield savings to Medicare. Such efforts, if carefully implemented, could also help to improve the quality of patient care for Medicare's oldest and most frail beneficiaries.

KEY FINDINGS

Beneficiaries living in nursing homes, assisted living and other long-term care facilities account for a disproportionate share of total Medicare spending.

- Medicare beneficiaries living in long-term care facilities for at least part of 2006, account for 6 percent of the Medicare population but 17 percent of total Medicare spending. However, nearly half of the Medicare spending for these beneficiaries occurred prior to their admission into a long-term care facility.

- Beneficiaries who lived in long-term care facilities for all of 2006 (i.e., survivors) account for 3 percent of the Medicare population, but 5 percent of Medicare spending. Beneficiaries who lived in long-term care facilities in 2006 but died before the end of the year (i.e., decedents) account for 1 percent of the Medicare population, but 4 percent of Medicare spending.

Beneficiaries living in long-term care facilities in 2006 are disproportionately represented among those in the top quartile and top decile of Medicare spending.

- Among Medicare beneficiaries who survived in long-term care facilities for all of 2006, 41 percent were in the top quartile of Medicare spending, with average Medicare spending of $26,732; 17 percent were in the top decile of Medicare spending with average Medicare spending of $47,116.

- Among beneficiaries living in long-term care facilities who died before the end of 2006, 69 percent were in the top quartile of Medicare spending with average Medicare spending of $29,103; 31 percent were in the top decile of Medicare spending, with average spending of $48,883. Although annual spending for decedents is only slightly higher than spending for survivors, most decedents died before the end of the year and thus did not contribute a full year of spending to estimates.

- Medicare spending for beneficiaries who lived in long-term care facilities for all of 2006 (including decedents) was $14,538 per beneficiary -- nearly twice the average Medicare spending for all beneficiaries in 2006.

Beneficiaries living in long-term care facilities have relatively high rates of hospital visits, emergency room visits, and skilled nursing facility admissions.

Hospital Visits

More than one third (38 percent) of beneficiaries living in a long-term care facility in 2006 (both survivors and decedents) were admitted to a hospital at some point in the year and 41 percent of these beneficiaries (15 percent of all long-term care residents) had two or more hospital admissions in 2006.

- Nearly a quarter of all hospitalizations (24 percent) were for ambulatory care sensitive conditions (e.g., asthma, tuberculosis), which have been used to identify potentially preventable hospitalizations.

Emergency Room Visits

- About half (51 percent) of beneficiaries living in a long-term care facility in 2006 had at least one emergency room visit during the year, and half of these beneficiaries (26 percent overall) had two or more emergency room visits.

Skilled Nursing Facility Stays

- More than one quarter (27 percent) of beneficiaries living in a long-term care facility in 2006 had a skilled nursing facility stay during the year, averaging 40 covered SNF days in 2006.

- Among long-term care facility residents with a SNF stay in 2006, more than a third (36 percent) had another SNF admission before the end of the year.

Beneficiaries' average monthly Medicare spending in the first six months following a transition to a long-term care facility is more than double the average monthly spending for longer term residents who lived in long-term care facilities for at least one year.

- Average monthly Medicare spending in the first six months following a transition to a long-term care facility is $2,069 per month --- more than twice the average spending for beneficiaries living at least a year in a long-term care facility ($949 per month).

Reductions in hospitalizations among Medicare beneficiaries living in long-term care facilities could reduce Medicare spending.

- If hospitalizations among Medicare beneficiaries living in long-term care facilities were reduced by 25 percent, Medicare could save an estimated $2.1 billion in 2010 alone. These illustrative estimates take into account Medicare-covered Part A expenses incurred by beneficiaries during their hospital stay exclusively, so may provide a conservative indication of potential savings.[5] On the one hand, the estimates do not take into account additional reductions in Medicare spending that would result from fewer ambulance transfers, emergency room visits, Part B expenses incurred during an inpatient stay, or post-discharge SNF admissions. But on the other hand, they do not take into account potential increases in Medicare spending that could result from interventions and services that may be needed to reduce rates of unnecessary hospitalizations.

As policymakers move forward with interventions designed to reduce Medicare spending associated with preventable hospital readmissions, as is called for in the new health reform law, greater attention to the medical care provided to beneficiaries living in long-term care facilities could yield savings and potentially improve the quality of their care.

Background

As Medicare expenditures continue to rise, policymakers are increasingly interested in finding strategies to rein in spending without jeopardizing quality of care. Of particular concern are costs incurred by Medicare's high spenders: the minority (10 percent) of beneficiaries that account for the majority (58 percent) of Medicare spending.[6] Researchers have developed a number of ways to help identify the high spenders within the Medicare population, based on the number of chronic conditions,[7] the specific types of conditions and diseases they have,[8] prior years' Medicare spending,[9] and the presence of functional impairments.[10] In response, policymakers and others included a variety of interventions in the Patient Protection and Affordable Care Act [PPACA; P.L. 111-148] as amended by the Health Care and Education Reconciliation Act of 2010 [HCERA; P.L. 111-152], including interventions aiming to reduce hospital readmissions, control spending for post-acute care through bundled payments, establish incentives for better care coordination through accountable care organizations, and create a new Center for Medicare and Medicaid Innovation. Yet, few proposed interventions focus specifically on utilization of Medicare-covered services and associated Medicare spending for beneficiaries living in long-term care facilities.

Medicare spending incurred by beneficiaries living in nursing homes, assisted living, and other long-term care settings, has attracted surprisingly little attention, perhaps because Medicaid, not Medicare, is the primary source of public funds for nursing home care.[11] However, beneficiaries admitted to long-term care facilities rely primarily on Medicare to cover the cost of their medical care. These beneficiaries may be among Medicare's high spenders because they are disproportionately likely to have multiple chronic conditions as well as functional and cognitive limitations.[12] Nursing home residents with dementia are at high risk of having pneumonia, eating problems, and other conditions that are associated with emergency room visits, hospitalizations, and other Medicare-covered interventions.[13] Residents of long-term care facilities are also at high risk of falls[14] which in turn leads to potentially preventable hospital and post-acute services, which are generally covered by Medicare.[15]

This paper documents Medicare spending and Medicare-covered service use among beneficiaries living in nursing homes and other long-term care facilities. It assesses the extent to which this relatively small but easily identified segment of the Medicare population is among Medicare's high spenders, and presents illustrative estimates of potential savings that could be achieved with a reduction in hospitalizations among long-term care facility residents.

Data and Methods

The analysis of utilization and spending associated with Medicare-covered services for beneficiaries living in long-term care settings is based on survey and claims data from the nationally representative Medicare Current Beneficiary Survey (MCBS) Cost and Use Files for 2003 through 2006. Our analysis focuses on three groups of long-term care residents: (1) Medicare beneficiaries residing in a long-term care setting at some point during 2006; (2) Medicare beneficiaries residing in long-term care facilities as of January 2006, who either survived the full year or died before the end of the year; and (3) beneficiaries transitioning into long-term care facilities, based on a pooled sample of Medicare beneficiaries drawn from four years of MCBS data (2003 through 2006).

For this analysis, we define long-term care facilities to include nursing homes, assisted living facilities, and other facilities that are not reimbursed by Medicare and have at least three long-term care beds.[16] Unless the individual is otherwise living in a long-term care facility, we exclude costs associated with short-term stays in skilled nursing facilities (SNFs), long-term care and rehabilitation hospitals eligible for Medicare reimbursement. Beneficiaries enrolled in Medicare Advantage plans are excluded because Medicare does not receive claims data for Medicare Advantage enrollees.

All Medicare expenditures incurred in 2003, 2004, or 2005 were adjusted to 2006 dollars using the Medicare Trustees Report Per Capita Medicare Part A & B Spending data. Medicare spending associated with outpatient prescription drugs in 2006 are not included because comparable data are not available for years prior to the implementation of the Part D benefit. Estimates of Medicare savings are based on median per capita costs per hospitalization in 2006, trended forward to 2010, using Part A per capita growth rates. Differences in spending and utilization across types of facilities could not be analyzed due to sample size constraints. All differences reported in the paper are significant at the level of $p<0.05$ for a two-sided test.[17]

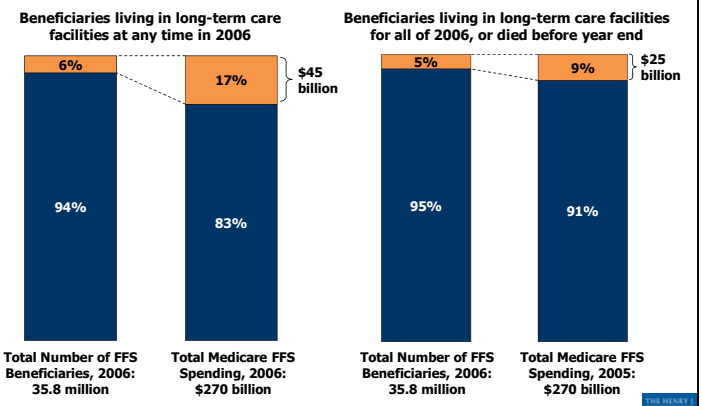
Results

Medicare Beneficiaries in Long-Term Care Facilities For Some or All of 2006

An estimated 2.2 million Medicare beneficiaries lived in a long-term care facility for some or all of 2006. These beneficiaries account for 6 percent of the Medicare population but 17 percent of total Medicare spending, with average Medicare spending of $19,952 per person, totaling $44.6 billion in 2006 **(Exhibit 1)**. More than half (56%) of all beneficiaries in long-term care facilities for some or all of 2006 were in the top quartile of Medicare spending, and almost one-third (30%) were in the top decile. However, for some of these long-term care residents, a portion of their Medicare spending occurred prior to entering a facility. Of the 2.2 million beneficiaries in a long-term care facility at some point during 2006, 23 percent were admitted to the facility after January 1st of the year, 54 percent resided in a facility for the full year, and 23 percent lived only in the facility but died before the end of the year.

Exhibit 1

Beneficiaries living in long-term care facilities have disproportionately high Medicare spending



NOTE: Excludes Medicare Advantage enrollees' spending. Excludes Medicare prescription drug spending.
SOURCE: Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey Cost & Use File, 2006.

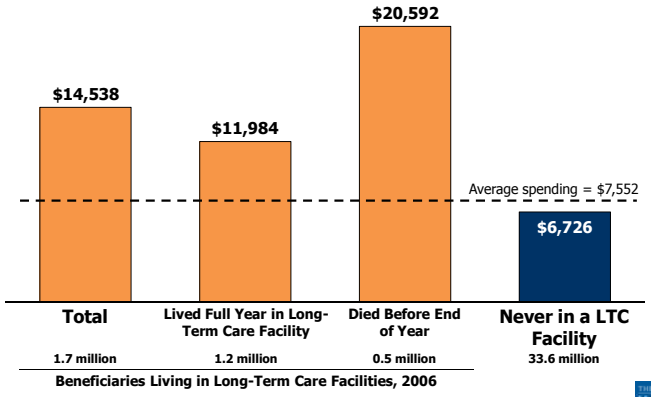
Medicare Beneficiaries in Long-Term Care Settings a Full Year or Who Died before the End of the Year

To isolate Medicare spending and service use that occurred during facility stays (neither before nor after), we looked at beneficiaries who lived in a long-term care facility from the first day of the year (January 2006), who either survived the full year in the facility or died before the end of the year. An estimated 1.7 million Medicare beneficiaries were living in a long-term care facility at the start of 2006, most of whom (70 percent) survived the full year; 30 percent died before the end of the year. Among beneficiaries who survived for the full year, 58 percent lived in a nursing home, 14 percent lived in an assisted living facility, and 28 percent lived in another setting (or multiple settings).

Medicare beneficiaries living in a long-term care setting for all of 2006, including those who died before the end of the year, accounted for 5 percent of all Medicare beneficiaries and 9 percent of all Medicare spending, with Medicare spending that summed to approximately $25 billion in 2006. Average Medicare expenditures for these long-term care residents were more than twice the average expenditures for beneficiaries who never lived in a long-term care facility in 2006 ($14,538 versus $6,726 per capita), and nearly twice the average amount for all Medicare beneficiaries ($7,552; **Exhibit 2**).

Exhibit 2

Average Medicare spending is about 2-times greater for beneficiaries living in long-term care facilities than for all others, 2006

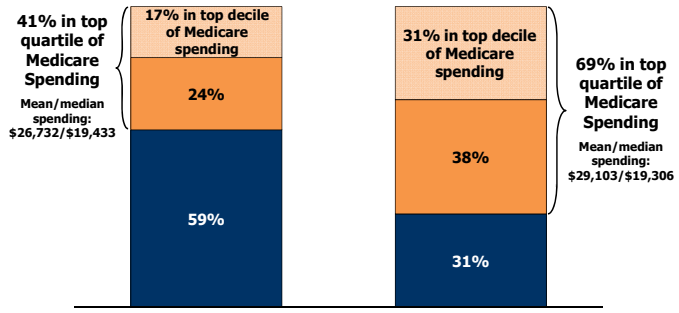


NOTE: Includes beneficiaries who were in long-term care facilities as of January 1, 2006, including those who died before the end of 2006. Excludes Medicare Advantage enrollees' spending. Excludes Medicare prescription drug spending.
SOURCE: Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey Cost & Use Files, 2006.

Beneficiaries living in long-term care facilities for all of 2006 (i.e., survivors) account for 3 percent of the Medicare population, but 5 percent of Medicare spending. Beneficiaries who died before the end of the year (i.e., decedents) account for 1 percent of the total Medicare population, but 4 percent of Medicare spending. Among survivors, 41 percent were in the top quartile of Medicare spending, with average annual Medicare spending of $26,732, and 17 percent were in the top decile of Medicare spending, with average Medicare spending of $47,116 **(Exhibit 3)**. Among decedents, 69 percent were in the top quartile of Medicare spending, with average annual Medicare spending of $29,103, and 31 percent were in the top decile of Medicare spending, with average Medicare spending of $48,883.

Exhibit 3

A disproportionately large share of Medicare beneficiaries in long-term care facilities are in the top quartile and top decile of Medicare spending, 2006

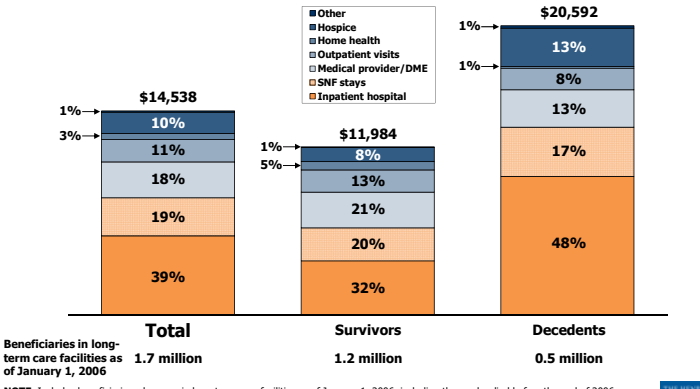


NOTE: Includes beneficiaries who were in long-term care facilities as of January 1, 2006, including those who died before the end of 2006. Excludes Medicare Advantage enrollees' spending. Excludes Medicare prescription drug spending.
SOURCE: Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey Cost & Use File, 2006.

Hospitalizations account for the largest share (39 percent) of Medicare spending among beneficiaries living in long-term care facilities in 2006, including decedents, with SNF stays and medical provider/durable medical equipment use accounting for the second and third largest shares of spending, respectively **(Exhibit 4)**. Hospitalizations account for

Exhibit 4

Hospitalizations account for the largest share of average Medicare spending per long-term care facility resident, 2006



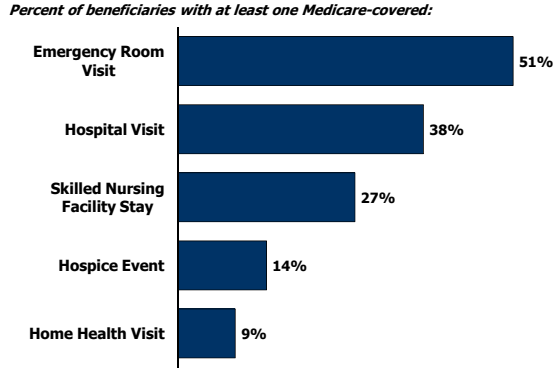
NOTE: Includes beneficiaries who were in long-term care facilities as of January 1, 2006, including those who died before the end of 2006. Excludes Medicare Advantage enrollees' spending. Excludes Medicare prescription drug spending. SNF is skilled nursing facility. DME is durable medical equipment.
SOURCE: Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey Cost & Use Files, 2006.

about half of Medicare spending for decedents who lived in the facility during the year prior to their death, while accounting for about a third of total spending for survivors (48 percent versus 32 percent). Conversely, SNF stays account for a slightly larger share of Medicare spending among survivors than decedents.

Beneficiaries living in long-term care facilities in 2006 had relatively high rates of hospital, emergency room and skilled nursing facility use **(Exhibit 5)**.[18] Overall, about half (51 percent) of all Medicare beneficiaries living in long-term care facilities in 2006 went to the emergency room one or more times in 2006. Nearly two in five Medicare beneficiaries living in long-term care facilities (38 percent) were hospitalized one or more times in 2006. More than a quarter of all long-term care facility residents (27 percent) had a SNF stay during the year, 14 percent received Medicare-covered hospice services, and 9 percent received Medicare-covered home health visits while living in a long-term care facility.

Exhibit 5

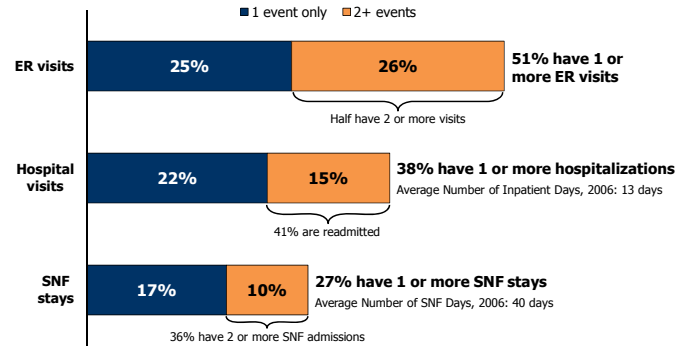
Beneficiaries living in long-term care facilities have high rates of hospital, emergency room and other Medicare-covered events, 2006



NOTE: Includes beneficiaries who were in long-term care facilities as of January 1, 2006, including those who died before the end of 2006. Excludes Medicare Advantage enrollees. Excludes Medicare prescription drug spending.
SOURCE: Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey Cost & Use Files, 2006.

Exhibit 6

Beneficiaries in long-term care facilities with ER, hospitalization, or SNF use often have more than one event, 2006



NOTE: Percentages may not sum due to rounding. Includes beneficiaries who were in long-term care facilities as of January 1, 2006, including those who died before the end of 2006. Excludes Medicare Advantage enrollees' spending. Excludes Medicare prescription drug spending. SNF is skilled nursing facility. ER is emergency room.
SOURCE: Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey Cost & Use Files, 2006.

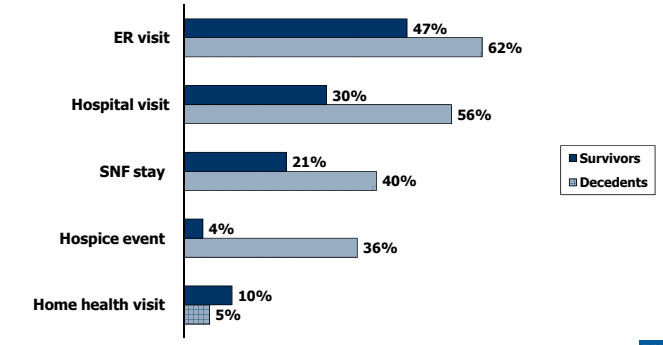
Many of the long-term care facility residents who used hospital, emergency room or skilled nursing facility services at some point during 2006 had multiple events over the course of the year, based on the group of that includes full-year residents and those who died before the end of the year. Among long-term care residents with a hospital admission in 2006, 41 percent were readmitted during the course of the year **(Exhibit 6)**. Among long-term care facility residents with at least one emergency room visit in 2006, half had another emergency room visit before the end of the year. Among long-term care facility residents with a SNF stay in 2006, more than a third (36 percent) had another SNF admission before the end of the year. Long-term care facility residents with one or more hospitalizations in 2006 had, on average, 13 inpatient hospital days. Long-term care residents with one or more SNF admissions, averaged 40 covered SNF days in 2006.

Among beneficiaries living in long-term care facilities in 2006, those who died before the end of the year had higher rates of hospital, emergency room, SNF, and hospice use than survivors. For example, nearly two-thirds of residents who died before the end of the year went to the emergency room at least once during the year -- a higher rate than among residents who survived the full year (62 percent versus 47 percent, respectively; **Exhibit 7**). Decedents also had higher hospitalization rates than survivors (56 percent versus 30 percent) and higher rates of SNF use (40 percent versus 21 percent). Hospice use was also more common among decedents (36 percent) than survivors (4 percent), as would be expected.

Potentially Preventable Hospital Admissions. To examine whether the hospitalizations of long-term care residents were potentially preventable, we analyzed the inpatient hospital claims for beneficiaries who lived in long-term care facilities in 2006 (including decedents), and calculated the percent of hospitalizations that were for ambulatory care sensitive conditions (e.g., asthma, tuberculosis), which have been used extensively to identify potentially preventable hospitalizations.[19] We found that 24 percent of all hospitalizations for long-term care facility residents in 2006 were potentially preventable. In contrast, 19 percent of hospitalizations among beneficiaries who were never in a long-term care facility in 2006 were for ambulatory care sensitive conditions. The higher rate of ambulatory care sensitive conditions among long-term care facility residents has also been documented by other researchers.[20]

Exhibit 7

Decedents in long-term care facilities have higher rates of ER, hospital, and SNF use than beneficiaries living a full year in facilities, 2006



NOTE: Includes beneficiaries who were in long-term care facilities as of January 1, 2006, including those who died before the end of 2006. Excludes Medicare Advantage enrollees' spending. Excludes Medicare prescription drug spending. SNF is skilled nursing facility. ER is emergency room.
SOURCE: Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey Cost & Use Files, 2006.

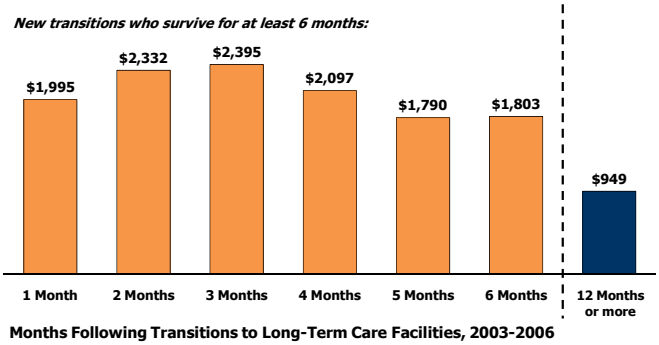
Medicare Beneficiaries Transitioning to Long-Term Care Facilities

Given the substantial interest in the high cost associated with Medicare beneficiaries in transition,[21] we looked at Medicare spending among the cohort of beneficiaries transitioning into long-term care facilities.[22] To have a sufficient sample size to be representative of all beneficiaries transitioning to a long-term care facility, we combine four years of data (2003-2006).[23] Roughly 600,000 Medicare beneficiaries are admitted to a long-term care facility each year. In 2006, about three-fourths (78 percent) of new admissions resided in a nursing home, 7 percent in an assisted living facility, and 15 percent in other facilities, such as continuing care retirement communities. More than a third (39 percent) were admitted to the long-term care facility from the community, 50 percent were transferred from a SNF, and 11 percent were transferred from a hospital.

Spending for Beneficiaries Who Survived at Least Six Months after Admission. Average Medicare spending for beneficiaries who survived at least six months after transitioning to a long-term care facility averaged $2,069 per month for the first six months – more than twice the average monthly spending among those living in a long-term care facility for at least one year ($949 per month). Average monthly spending varied between $1,790 and $2,395 over the first six months after transitioning to a long-term care facility **(Exhibit 8)**. This finding suggests that spending is higher in the first months after transitioning to a long-term care facility than in later months.

Exhibit 8

Average Medicare spending in the months following transition to a long-term care facility is higher than average spending for beneficiaries living in facilities for at least one year



NOTE: New transitions includes all beneficiaries who survived for at least six months after transitioning to the long-term care facility in 2003-2006. Beneficiaries living in a long-term care facility for at least one year includes only beneficiaries in a facility as of January 1, 2006 who survived for at least one year. Excludes Medicare Advantage enrollees' spending. Excludes spending for prescription drugs, hospice, and home health.
SOURCE: Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey Cost & Use file, pooled 2003 - 2006.

Potentially Preventable Hospital Admissions. Nearly one third (30 percent) of all hospitalizations that occurred in the first six months following beneficiaries' admission to a long-term care facility were for ambulatory care sensitive conditions . This rate is significantly higher than the rate observed among all beneficiaries living in a long-term care facility in 2006 (24 percent), suggesting that even more hospitalizations may be potentially preventable in the first months after beneficiaries transition to a long-term care facility.

Potential for Medicare Savings

To illustrate the potential savings for Medicare that could be achieved with a reduction in hospitalization rates for long-term care facility residents, we calculated the median Medicare expenditures per inpatient stay in 2006 for this population, and trended the data forward to 2010. We estimate that a 15 percent reduction in hospitalization rates among long-term care facility residents would result in Medicare savings of $1 billion in 2006, or $1.3 billion in 2010 dollars. A 25 percent reduction in hospitalizations would reduce Medicare spending of $1.7 billion in 2006, or $2.1 billion, if trended forward to 2010. The savings are intended to be illustrative and are most likely conservative. On the one hand, a reduction of 15 to 25 percent may be conservative; as noted earlier, other researchers indicate hospitalizations could be reduced by as much as 30-67 percent for long-term care facility residents, with appropriate interventions.[24] Further, our savings estimate includes only inpatient Part A claims, but do not include Medicare costs associated with reductions in emergency room visits, ambulance transfers, post-acute SNF stays, or Part B expenses incurred by patients during an inpatient stay. On the other hand, they do they take into account the additional costs that could result from additional services or interventions that would be needed to support patient care needs while reducing hospitalizations.

Limitations

The results of this study may not be generalizable to all Medicare beneficiaries in long-term care facilities for a few reasons. First, the MCBS does not have spending and utilization data for beneficiaries enrolled in Medicare Advantage plans. The overall effect of excluding beneficiaries enrolled in Medicare Advantage plans should be minimal, since in 2006 only 10 percent of all beneficiaries in long-term care facilities were enrolled in these plans. Second, data limitations required us to assume that beneficiaries who transitioned to long-term care facilities were never discharged back to the community; this assumption should not greatly impact our results because only a relatively small share (8 percent) ever returned to the community for any period of time within the first six months after transitioning to the facility.[25] Third, sample size constraints precluded us from examining variations in service use and Medicare costs by type of long-term care facility.

Our estimates of Medicare spending for beneficiaries who transitioned to long-term care facilities are conservative because they do not take into account expenses for hospice, home health, and prescription drugs due to limitations of the MCBS data;[26] as a result, our estimates understate Medicare spending for these long-term care residents by at least 14 percent, based on use of these services by full-year residents. Additionally, sample size constraints limit our ability to analyze the trajectory of spending beyond the first six months for beneficiaries transitioning into a long-term care facility. Without a full year of data, we cannot say with certainty whether spending for new transitions declines, rises, or remains steady beyond the first six months in a long-term care facility.

Discussion

This study finds a large share of Medicare beneficiaries in long-term care facilities among Medicare's high spenders, a disproportionate share of whom are in the top quartile and decile of Medicare spending. These relatively old, frail, and often cognitively impaired beneficiaries have comparatively high rates of hospitalizations and readmissions, many of which appear to be for potentially preventable ambulatory care sensitive conditions. Efforts to reduce unnecessary hospitalizations, emergency room visits, ambulance transfers and post-acute skilled nursing facility care for long-term care facility residents could reap significant Medicare savings over a ten-year budget window. Greater attention to transitions to and from the hospital could also help to minimize costs associated with preventable complications. In addition, to the extent that Medicaid incurs higher expenditures associated with Medicare cost-sharing for beneficiaries dually eligible for Medicare and Medicaid, improved management of medical services could also result in Medicaid savings. Furthermore, efforts to reduce preventable hospitalizations may improve the quality of life for long-term care facility residents, because hospitalizations are associated with cognitive decline among the elderly.[27]

As policymakers look for ways to slow the growth in Medicare spending, our results underscore the potential value in pursuing interventions that focus specifically on Medicare beneficiaries living in long-term care facilities; however, it is beyond the scope of this paper to conjecture on how best to do so. Reducing preventable hospitalizations and improving care management for chronically ill beneficiaries are widely recognized as high priorities for health reform, although much of the focus thus far has been on post-acute care and beneficiaries with certain chronic conditions, rather than on care provided to people living in long-term care facilities.[28]

Given the vulnerabilities of this population, and limited capacity of many long-term care facilities to deal with medically complicated situations, caution is warranted before adopting policies that could adversely affect patient care. The decision by staff at a long-term care facility to send a patient to a hospital is often appropriate, all things considered. However, with more than two million beneficiaries currently living in long-term care settings, a number that is expected to climb as the population ages over the next several decades,[29] effective interventions are needed to improve the medical management of beneficiaries living in these facilities. Greater attention to the medical care provided to the long-term care facility population could not only temper the growth in Medicare spending, but also improve the quality of life for this relatively old and frail population.

Reference

[1] The Patient Protection and Affordable Care Act [PPACA; P.L. 111-148] as amended by the Health Care and Education Reconciliation Act of 2010 [HCERA; P.L. 111-152].

[2] The analysis includes Medicare spending incurred by beneficiaries living in facilities that are not reimbursed directly from Medicare, and thus excludes spending incurred by beneficiaries in Medicare-covered skilled nursing facilities, long-term care and rehabilitation hospitals who did not otherwise reside in a long-term care facility, such as a nursing home or assisted living facility.

[3] For example, see Saliba D, Kington R, Buchanan J, et al., Appropriateness of the decision to transfer nursing facility residents to the hospital, Journal of the American Geriatrics Society, 2000 Feb; 48(2):230-1. See also Grabowski D, O'Malley J and Barhydt N. The costs and potential savings associated with nursing home hospitalizations. Health Affairs, 2007; 26(6): 1753-1761. Also see Ouslander JG, Lamb G, Perloe M, et al., Potentially avoidable hospitalizations of nursing home residents: frequency, causes, and costs. Journal of the American Geriatrics Society. 2010; 58: 627-635.

[4] For example, see Perry M, Cummings J, Jacobson G, et al., "Medical care for long-term care residents: who is in charge?" Kaiser Family Foundation, September 2010. See also Desmarais H and Fuchs B, "Financial incentives in the long-term care context: a first look at relevant information," Kaiser Family Foundation, September 2010. Also see Stevenson DG and Studdert DM. The rise of nursing home litigation: findings from a national survey of attorneys. Health Affairs. 2003;22(2):219-229. See also U.S. Government Accountability Office. Skilled nursing facilities: Medicare payments exceed costs for most but not all facilities. 2002 December 31. GAO-03-183; and U.S. Government Accountability Office. Medicaid nursing home payments: States' payment rates largely unaffected by recent fiscal pressures. 2003 October 17. GAO-04-143. See also Kaiser Family Foundation. Update on the public's views of nursing homes and long-term care services --- Toplines. 2007 December. Also see Bostick JE, Rantz MJ, Flesner MK, and Riggs JC. Systematic review of studies of staffing and quality in nursing homes. Journal of the American Medical Directors Association 2006; 7(6): 366-376. Also see Carter MW. Factors associated with ambulatory care sensitive hospitalizations among nursing home residents. Journal of Aging and Health 2003; 15: 295-330.

[5] UnitedHealth Center for Health Reform & Modernization estimated Medicare savings of $165.5 billion over ten years from an institutional preadmission program. See UnitedHealth Center for Health Reform & Modernization, "Federal health care cost containment – how in practice can it be done?" Working paper 1, May 2009.

[6] Kaiser Family Foundation. Medicare Chartbook . 2010. *(forthcoming)* Research has noted that the spending has become less concentrated over time. See Riley GF. Long-term trends in the concentration of Medicare spending. Health Affairs 2007; 808-816.

[7] Anderson GF. Medicare and Chronic Conditions. NEJM; 353(3): 305-309. This summary article states that 23 percent of beneficiaries with five or more chronic conditions account for 68 percent of the program's spending.

[8] Thorpe KE, Florence CS, and Joski P. Which medical conditions account for the rise in health care spending? Health Affairs 2004 (August 24); W4-437 – W4-445.

[9] Congressional Budget Office, High-Cost Medicare Beneficiaries, May 2005; available at [www.cbo.gov/ftpdocs/63xx/doc6332/05-03-MediSpending.pdf]. Last accessed February 23, 2010; Monheit AC, "Persistence in health expenditures in the short run: Prevalences and consequences," Medical Care 2003; 41 (7): III53-III64; and

[10] Office of the Assistant Secretary for Planning & Evaluation, U.S. Department of Health and Human Services, "Individuals living in the community with chronic conditions and functional limitations: A closer look." January 2010.

[11] Kaiser Commission on Medicaid and the Uninsured, "Medicaid and long-term care services and supports," February 2009.

[12] Centers for Disease Control and Prevention, National nursing home survey, 2004.

[13] Mitchell SL, Teno JM, Kiely DK, et al. The clinical course of advanced dementia, NEJM 2009; 361(16): 1529-1538.

[14] Centers for Disease Control and Prevention, National nursing home survey, 2004.

[15] See Grabowski DA, O'Malley JA, and Barhydt NR. The costs and potential savings associated with nursing home hospitalizations. Health Affairs. 2007; 26(6):1753-1761. See also, Cohen-Mansfield J and Lipson S. To hospitalize or not to hospitalize? This is the question: An analysis of decision making in the nursing home. Behavioral Medicine 2009; 32(2): 64-70. Also see Saliba D, Kington R, Buchanan J, et al., Appropriateness of the decision to transfer nursing facility residents to the hospital, Journal of the American Geriatrics Society, 2000 Feb; 48(2):230-1.

[16] Beneficiaries are defined as living in a long-term care facility, according to the definition used by MCBS: they reside in an institution not reimbursed by Medicare with at least three long-term care beds, for which the facility's administrator answers "affirmatively to at least one of three questions, indicating the facility (1) provides personal care services to residents; (2) provides continuous supervision of residents; or (3) provides any long-term care."[16] We exclude SNFs, long-term care and rehabilitation hospitals eligible for Medicare reimbursement, and also exclude "mental health center psychiatric settings" or institutions "for mentally retarded/developmentally disabled beneficiaries" because the needs and circumstances of these residents differ materially from beneficiaries in other long-term care facilities.

[17] The Taylor-series Linearization error calculation method was used to account for the complex sampling design of MCBS. Analyses were conducted with SAS 9.1.3 series pack 2.

[18] Among Medicare beneficiaries living in the community in 2006 28 percent had at least one ER visit, 19 percent had at least one hospital visit, and 3 percent had at least one SNF stay.

[19] Agency for Healthcare Research and Quality. Appendix B. Ambulatory care sensitive conditions [cited 2009 Sept 3]. Available from: http://www.ahrq.gov/data/safetynet/billappb.htm; Agency for Healthcare Research and Quality. National Quality Measures Clearinghouse [updated 2009 August 31 cited 2009 Sept 3]. Available from: http://www.qualitymeasures.ahrq.gov/summary/summary.aspx?ss=1&doc_id=9984; and Goldfield NI, MCullough EC, Hughes JS, et al. Identifying potentially preventable readmissions. Health Care Financing Review. 2008;30(1):75-91; and Billings J, Anderson GM, Newman LS. Recent findings on preventable hospitalizations. Health Affairs. 1996;15(3):239-249. Ambulatory care sensitive conditions were determined by comparing primary ICD-9 codes for each inpatient claim on the MCBS Research Claims File against the list of ICD-9 codes for ambulatory care sensitive conditions that have been identified by the Agency for Healthcare Research and Quality. We then compared rates of hospitalizations for ambulatory care sensitive conditions among facility residents and beneficiaries living in the community during a six-month period.

[20] For example, see Carter MW. Factors associated with ambulatory care sensitive hospitalizations among nursing home residents. Journal of Aging and Health 2003; 15: 295-330.

[21] Jencks SF, Williams MV, and Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. NEJM. 2009; 360 (14): 1418-1428. See also, Mor V, Intrator O, Feng Z, and Grabowski DC. The revolving door of rehospitalization from skilled nursing facilities. Health Affairs.2010; 29 (1): 57-64.

[22] For the analysis of beneficiaries newly admitted to a long-term care facility, we excluded beneficiaries in long-term care facilities on January 1st of the first year they participated in the MCBS because their date of admission to the long-term care facility was indeterminate, and we wanted to examine spending for beneficiaries who had been in the facility for the same amount of time, in case length of time in the facility affected beneficiaries' spending and utilization (n= 1,461). For the same sub-analysis, we excluded beneficiaries who either died (n=144) or exited the MCBS panel less than six months after their initial date of admission to a facility (n=216). The first date of admission was defined as the first day in which a qualified long-term care facility received a payment for the beneficiary, and the beneficiary was not in a hospital or SNF.

[23] The analytic sample includes 334 beneficiaries.

[24] Ouslander JG, Lamb G, Perloe M, et al., Potentially avoidable hospitalizations of nursing home residents: frequency, causes, and costs. Journal of the American Geriatrics Society. 2010; 58: 627-635.

[25] The rate would be higher if the definition of long-term care facility resident included those in skilled nursing facilities (SNF). SNFs were not included in the definition because the analysis focuses on those living in facilities, rather than those with a short-term stay in a Medicare-covered facility.

[26] MCBS files do not specify monthly costs for home health, hospice, and prescription drugs services. See Centers for Medicare and Medicaid Services, Medicare Current Beneficiary Survey Questionnaires; 2005 Access to care: Survey facility identification [cited 2009 Sept 3].

[27] Ehlenbach WJ, Hough CL, Crane PK, et al. Association between acute care and critical illness hospitalization and cognitive function in older adults. JAMA 2010; 303(8): 763-770.

[28] For example Naylor MD, Brooten DA, Campbell RL, et al. Transitional care of older adults hospitalized with heart failure: a randomized controlled trial. Journal of the American Geriatrics Society. 2004;52(5):675-684; Coleman EA, Parry C, Chalmers S, and Min S. The care transitions intervention: Results of a randomized controlled trial. Archives of Internal Medicine. 2006;166(17):1822-1828; Peikes D, Chen A, Schore J, and Brown R. Effects of care coordination on hospitalization, quality of care, and health care expenditures among Medicare beneficiaries. JAMA. 2009;301(6):603-618; Sylvia ML, Griswold M, Dunbar L, et al. Guided care: cost and utilization outcomes in a pilot study. Disease Management. 2008;11(1):29-36.

[29] Purcell P and Whitman D. Topics in aging: Income of Americans age 65 and older, 1969 to 2004. Congressional Research Service. 2006 April. RL33387; and Feder J, Komisar HL, and Niefeld M. Long-term care in the United States: An overview. Health Affairs. 2000;19(3):40-56.

Appendix A: Mean Medicare Spending and Medical Service Use, by Status of Long-Term Care Facility Residence, 2006

	Never in long-term care facilities, 2006	Ever in long-term care facilities, 2006			Continuously in long-term care facilities for *entire year, 2006*		
		Total	Survivors	Decedents	Total	Survivors	Decedents
Number of Beneficiaries	**33,573,737**	**2,236,991**	**1,580,816**	**656,175**	**1,731,159**	**1,217,680**	**513,479**
Total Medicare Spending	**$ 6,726**	**$ 19,952**	**$ 17,841**	**$ 25,037**	**$ 14,538**	**$ 11,984**	**$ 20,592**
Inpatient Medicare Spending	$ 2,758	$ 8,016	$ 6,214	$ 12,359	$ 5,637	$ 3,851	$ 9,872
# Inpatient Stays	0.33	0.90	0.78	1.19	0.63	0.50	0.95
# Inpatient Covered Days, among users	8.6	14.8	14.8	14.8	12.8	12.4	13.2
% with at least one Inpatient Visit	19.1%	46.0%	39.6%	61.3%	37.5%	29.8%	55.8%
% of Hospitalizations for ACSCs	18.6%	22.8%	23.6%	21.6%	24.1%	25.4%	22.5%
SNF Medicare Spending	$ 248	$ 4,609	$ 4,570	$ 4,702	$ 2,706	$ 2,366	$ 3,511
# SNF Stays	0.04	0.58	0.50	0.79	0.40	0.32	0.59
# SNF Covered Days, among users	23.1	49.7	54.9	41.4	40.4	43.0	37.2
% with at least one SNF stay	3.1%	35.4%	30.8%	46.3%	27.0%	21.4%	40.2%
Medical Provider / DME Medicare Spending	$ 2,308	$ 3,161	$ 3,160	$ 3,165	$ 2,571	$ 2,537	$ 2,650
# Physician Visits	6.29	2.79	3.34	1.47	2.14	2.60	1.04
# DME Claims	2.01	2.08	2.31	1.54	1.70	1.79	1.49
Outpatient Medicare Spending	$ 928	$ 1,685	$ 1,686	$ 1,682	$ 1,578	$ 1,590	$ 1,548
Hospice Medicare Spending	$ 121	$ 1,575	$ 1,110	$ 2,695	$ 1,519	$ 1,008	$ 2,730
Hospice Covered Days, among users	63.3	71.5	166.3	43.6	77.8	178.1	51.4
% with at least one Hospice Event	1.4%	15.0%	4.8%	39.5%	13.5%	4.0%	36.2%
Home Health Medicare Spending	$ 363	$ 793	$ 1,003	$ 286	$ 442	$ 578	$ 118
Home Health Visits, among users	122.1	113.5	124.0	60.9	132.7	155.6	31.9
% with at least one Home Health Visit	8.0%	15.5%	18.2%	8.8%	8.7%	10.1%	5.4%
Other Medicare Spending	$ -	$ 114	$ 99	$ 148	$ 86	$ 54	$ 163
Number of ER Vists	0.55	1.26	1.18	1.47	0.98	0.88	1.22
% with 1 or more ER visits	28.0%	57.4%	53.7%	66.4%	51.2%	46.6%	62.2%
% with 2 or more ER visits	10.7%	31.8%	29.5%	37.5%	25.8%	23.0%	32.6%
% with 3 or more ER visits	4.9%	15.3%	14.2%	17.9%	9.9%	8.9%	12.3%
Percent in Top Quartile of Medicare Spending	**22.9%**	**56.2%**	**49.2%**	**72.9%**	**49.2%**	**41.0%**	**68.7%**
Percent in Top Decile of Medicare Spending	**8.7%**	**29.7%**	**27.2%**	**35.7%**	**20.9%**	**16.8%**	**30.9%**

NOTE: Excludes Medicare spending for prescription drugs and beneficiaries enrolled in Medicare Advantage. Top quartile of Medicare spending includes annual spending greater than or equal to $6,181.72. Top decile of Medicare spending includes annual spending greater than or equal to $22,330.91.
ACSCs are ambulatory care sensitive conditions. SNF is skilled nursing facility. ER is emergency room.

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